

REMARKS

In the Action, claims 1, 3-25 and 35-39 are rejected, and claims 26-34 and 40-47 are withdrawn from consideration as being directed to the non-elected invention. In response, claims 1, 4, 14, 16 and 35 are amended, and claims 26-34, 36 and 40-47 are cancelled. The pending claims in this application are claims 1, 3-25, 35 and 37-39, with claims 1, 12 and 35 being independent. In view of these amendments and the following comments, reconsideration and allowance are requested.

Rejections Under 35 U.S.C. § 103

Claims 1, 3-11, 14-21, 24, 25 and 35-39 are rejected under 35 U.S.C. § 103(a) as being obvious over U.S. Patent No. 6,337,323 to Cummings et al. in view of U.S. Patent No. 5,645,845 to Neumann et al. Cummings et al. is cited for disclosing insecticide pellets. Neumann et al. is cited for disclosing a gel composition containing a perfume.

The combination of Cummings et al. and Neumann et al. do not disclose or suggest an agrichemically effective solid formulation comprising sulfur-containing active ingredient solids and a terpene or oxygenated derivative thereof in an effective amount to reduce the odor from the sulfur-containing active ingredients as in the present invention. Cummings et al. and Neumann et al. fail to disclose the masking agent being present in an amount of 0.01 to 2 wt% as in claims 1 and 14, or an amount of 0.05 to 1 wt% as in claim 35.

The present invention is directed to the discovery that a terpene oil or oxygenated derivative thereof, and in particular, lemon oil, is effective when used in small amounts to mask the objectionable odor of sulfur-containing active ingredients, and particularly acephate. Acephate is known to have a very strong and objectionable odor which has limited its use in various applications. Numerous attempts have been made to disguise or mask the

offensive odor of acephate which have been unsuccessful in reducing the offensive odor without an overpowering perfume smell. More specifically, the prior attempts resulted in a strong perfume smell with the underlying objectionable offensive odor of acephate still being perceptible.

It is known by one skilled in the art of agrichemicals that it is very difficult to mask the odor of acephate regardless of the amount of perfumes or fragrances that are mixed with the acephate. Applicant has discovered after numerous attempts that terpene oils, and particularly essential lemon oils when used in an amount of 0.01 to 2 wt% are able to effectively mask the odor of acephate resulting in a faint lemon smell with no perceptible acephate odor. Even with the small amounts of the essential oil, the strong offensive odor of acephate is not detectable. Thus, Applicant discovered an effective method of masking the odor of acephate.

In one embodiment of the invention, the formulation is dispersed and dissolved in an aqueous solution which can be applied to large areas by spraying. Typically, formulations containing acephate are diluted in an amount of about 2 pounds per 100 gallons of water. Thus, the resulting solution contains about 0.3 ounce acephate per gallon. Even at this low concentration, acephate solutions when applied to turf produce a strong offensive odor. Dilution of the concentrate formulation of the present invention containing 1% lemon oil results in a final diluted solution containing about 0.003 ounce lemon oil per gallon. Thus, the amount of lemon oil applied in the dilute solution is extremely small. Applicant has found that even with this small amount of the lemon oil, the otherwise offensive odor of acephate is not detectable and only a mild lemon or citrus smell is detectable.

The cited patents provide no teaching or suggestion to one of ordinary skill in the art that a terpene oil, and particularly, an essential lemon oil, is able to effectively eliminate the

offensive odor of acephate either in granular form or as a solution that is sprayed onto the fields. Applicant has further discovered that perfumes and other fragrances such as those disclosed in the cited patents are not effective in masking the strong offensive odor of acephate.

The rejection is based on hindsight and speculation as to the effectiveness of the formulations disclosed in Cummings et al. and Neumann et al. The rejection is not based on facts or statements in the cited patents. For example, the Action refers generally to the “reodorants” in Cummings et al. and then speculates that the reodorants are effective for masking the odor of acephate. However, this position is clearly unsupported by the disclosure in Cummings et al. and is based solely on speculation. Furthermore, the only example of a “reodorant” disclosed in Cummings et al. is a non-ionic surfactant. Thus, Cummings et al. clearly fails to disclose or suggest to one of ordinary skill in the art the use of a terpene or oxygenated derivative thereof as in the claimed invention.

The Action fails to establish that the reodorant compounds referred to generally in Cummings et al. exhibit a perfume odor and are capable of masking or reducing the offensive odors of acephate and other sulfur-containing active compounds. Moreover, Cummings et al. does not identify the purpose of the reodorant or the function of the reodorant as speculated in the rejection. The only discussion in Cummings et al. of reducing odors relates to pelletizing in the absence of organic solvents.

Neumann et al. is unrelated to the claimed invention and to the pellet composition of Cummings et al. Neumann et al. is directed to a gel formulation for the controlled and sustained release of insecticidal active compounds using a heat source. Thus, Neumann et al. is not analogous to the pellet formulation of Cummings et al. or the formulation of the claimed invention and is not properly combined with Cummings et al.

The formulation of Neumann et al. relates to a vaporizable gel formulation containing pyrethroid insecticides and a vaporization regulating agent. The formulation is specifically directed to a mosquito fogger for treating a target area. The perfume in Neumann et al. is used only as an air freshener. Neumann et al. is not directed to systemic insecticides, acephate or granules containing an active agent as in the present invention or Cummings et al.

Neumann et al. further fails to suggest the use of a perfume to mask the odor of the insecticide or that the perfumes are effective in eliminating the perceptible odor of sulfur-containing insecticides such as acephate.

As discussed above, the invention is directed to the discovery of certain masking agents, namely, terpenes and oxygenated derivatives, and particularly, lemon oil, that are effective in masking or reducing the perceptible odor of acephate. The list of perfumes identified in Neumann et al. are not effective in reducing the perceptible odor of acephate or other sulfur-containing insecticides as recited in the claimed invention.

Neumann et al. provides no basis for selecting terpenes or oxygenated derivatives from the list of perfumes and provides no expectation of success in effectively masking the offensive odor of sulfur-containing active ingredients as in the present invention. Neumann et al. and Cummings et al. provide no guidance or suggestion to one of ordinary skill in the art to combine the terpene or oxygenated derivative in the claimed amounts in combination with the claimed active ingredients. Accordingly, claims 1 and 14 are not obvious over the combination of Cummings et al. and Neumann et al.

Cummings et al. and Neumann et al. further fail to disclose or suggest a formulation comprising 75 to 99 wt% acephate, a polymeric binder, an aromatic solvent and about 0.05 to 1 wt% of a lemon essential oil to reduce the perception of objectionable odors from the

acephate as in claim 35. Accordingly, claim 35 is allowable over the combination of the cited patents.

Cummings et al. and Neumann et al. further fail to disclose the active ingredients of claim 3, the formulation comprising acephate and 0.05 to 1 wt% of a lemon essential oil as the masking agent in claim 4, either alone or in combination with the features of claim 1. The cited patents further fail to disclose the masking agents of claims 5-9 or the binders of claims 10 and 11, in combination with the features of claim 1. Claims 15-25 depend from claim 14 and are allowable for the same reasons.

The cited patents further fail to disclose the masking agent being coated on the extruded solid as in claim 37, spraying the masking agent on the extruded solid as in claim 38, the agrichemically effective ingredient in an extruded solid having the masking agent sprayed onto the extruded solid as in claim 39, in combination with the features of the independent claims.

In view of the above comments and these amendments, the claims are submitted to be allowable over the combination of Cummings et al. and Neumann et al.

Claims 12, 13, 22 and 23 are rejected as being obvious over Cummings et al. in view of Neumann et al., and further in view of EP 0755626 to Lew et al. Lew et al. is cited for disclosing the use of a polyethylene oxide as a binder. For the reasons discussed above, the independent claims are allowable, such that the dependent claims are also allowable. Furthermore, Lew et al. provides no suggestion of modifying the formulation of Cummings et al. or Neumann et al. to include a polyoxyethylene binder so that these claims are allowable over the art of record.

In view of the above comments, the claims are submitted to be allowable over the art of record. Accordingly, reconsideration and allowance are requested.

Respectfully submitted,



Garrett V. Davis
Reg. No. 32,023

Roylance, Abrams, Berdo & Goodman, L.L.P.
1300 19th Street, N.W., Suite 600
Washington, D.C. 20036
(202) 659-9076

Dated: Jan 11, 2008